FLIGHT

The AIRCRAFT ENGINEER & AIRSHIPS

First Aero Weekly in the World

Founder and Editor : STANLEY SPOONER

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport

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"FLIGHT" PHOTOGRAPHS.

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DIARY OF FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in the following list :—

1927

Jan. 13 **Professor F. C. Lea, D.Sc., M.Inst.C.E., M.I.Mech.E. "Some Experiments on the Effects of Repeated Stresses on Materials," before Inst.Ae.E.**

Jan. 25 **Capt. F. S. Barnwell, B.Sc., O.B.E., A.F.C., F.R.Ae.S. (Honours Member). "Some Notes on the Design of Airscrews," before Inst.Ae.E.**

Feb. 1 **Mr. A. H. R. Fedden, F.R.Ae.S. "Supercharging for Aero Engines," before R.Ae.S.**

WITH the arrival at New Delhi of the de Havilland "Hercules," carrying as passengers, among others, the Secretary of State for Air, Sir Samuel Hoare, and his wife, Lady Maud Hoare, the first link has been forged in the chain of Empire air communications which will ultimately connect Great Britain with even the most distant parts of the British commonwealth of nations. The occasion is an historic one in itself, and it may surely be taken as a good omen that the flight of the first three "Hercules" machines was entirely successful, the schedule arranged before the commencement of the flight being adhered to practically without exception, the only delay to occur being caused by an extremely severe sandstorm that compelled, or at any rate rendered advisable, a return to Jask. As Sir Samuel Hoare pointed out on the arrival of the machine at Delhi, this was the first time that a Cabinet Minister had arrived by air in India, that a lady had made such a long flight, that a lady had arrived in India by air, that an Officer Commanding Air Forces had arrived by air to take charge of his command (this reference is, of course, to Air Vice-Marshal Sir Geoffrey Salmond) and that a commercial aeroplane had flown from England to India. It was equally the first time that a letter from His Majesty the King was delivered by air to the Viceroy of India (Lord Irwin). Incidentally, this was probably also the first time in the history of flying that a flight of this distance has been attempted, following a fixed time-table. Taking it all round, we have cause to be satisfied with our first step in Empire aviation, and for that we must largely give credit not only to the de Havilland machine, the Bristol engines, Capt. Barnard and Mr. Wolley Dod, the two pilots, Squadron-Leader Johnstone, the navigator, and the engineer and wireless operator, but also to Sir Samuel Hoare, to whose initiative is due the fact that the flight became possible. Nor should we overlook the very important part played by Lady Maud Hoare, who, although she chooses to make light of her experience, has shown great enterprise and determination in undertaking what must, after all, have been a fairly arduous journey.

First Link Forged

A Three-engined Performance

Last week we referred to the fact that the three de Havilland "Hercules" machines which have successfully completed their journeys to the East were, to all intents and purposes, taken straight out of the shops and sent on their long flights. The amount of preliminary testing carried out before the commencement of the flights was relatively small, in view of the fact that the "Hercules" is a new type of machine, at any rate as regards the de Havilland Aircraft Company, whose first three-engined aeroplane it is. That all three machines should get through to their various destinations without mishap of any kind is a tribute not only to the company which designed and built them, but also, we think, to the three-engined type in general. While we should be the last to claim that three single-engined machines could not have done the same (as a matter of fact, the four Fairey III D service machines that flew from Cairo to the Cape, back to Cairo and on to England kept to a time-table), it has definitely been proved that the three-engined type does possess a very large measure of reliability, and, personally, we have no doubt that when the regular services come into operation between Cairo and Basra, the same reliability will be maintained. Thus it may be said that British civil aviation has advanced another step forward. Statistics for five years of regular air route flying show that British aircraft have attained a remarkable degree of safety. It is not too much to hope that we are now in a fair way to have solved also the problem of reliability. Speaking broadly, there remains one more of the three chief factors in real commercial aviation to be achieved: that of economy.

In all forms of transport, and perhaps in air transport more than anywhere, the first two are to some extent antagonistic to the last named. Safety calls for thorough and extensive ground organisation, or, in other words, expense. Reliability is to be attained by first-class flying stock, a careful system of inspection, replacement and overhaul, and, last but not least, by the use of machines with ample power reserve. Obviously the problems of safety and reliability overlap to a very marked degree. This applies nowhere more than in the case of a good reserve of power, which enables a machine to get out of a restricted space with its full load. But it is equally essential to reliability, since it is only by being able to add, in exceptional circumstances, several miles per hour to the speed in order to keep to a fixed time-table, that an air line can ever be regarded as a commercial proposition. We have had an excellent demonstration of this fact in the case of sail *versus* steam. When steamers first began to challenge sail, they had an uphill fight. Doubtless in the early days of steam, cargo rates were more expensive than those charged for transport in sailing vessels. Certainly they are nowadays. But the fact that the steamer is reliable, that it can be counted upon to reach its destination within a few hours of its scheduled time, more than makes up for the cost of the coal, or oil, burned to propel it, as compared with the "free" power of the sailing vessel.

To us it seems that those interested in air transport may take courage from this fact. Granted that we must have good flying stock, an extensive ground organisation, highly skilled personnel, ample power reserve. If, by aiming first at these things, we can prove conclusively that air-route flying is safe, is reliable, and saves a very great deal of time, does it not stand to reason that in time the problem of economy will solve itself? Personally we think the answer must undoubtedly be yes—the more so as it is now admitted that surface transport has reached a stage where it cannot, except at quite disproportionate cost, be very much accelerated. Commercial aviation is gradually emerging from the speculative stage. It is slowly but unmistakably being realised that economy in commercial aviation is not to be attained by loading machines up to the limit of their carrying power (and to the limit of their engine power), but rather by having in hand a good reserve of power capable of dealing with emergencies. That way lies safety and reliability, certainly, and economy probably, because once the safety and reliability have been proved, the extra volume of traffic attracted will automatically work towards better economy. The old basis of horse-power expended per passenger carried was all very well in its way, but so many other factors enter into the question that this simple basis, attractive as it is, is no longer any real criterion. It is for this reason that we do not share the view held in certain quarters that until it is possible to carry, on commercial aeroplanes, 10 or 20 lbs. per horse-power, flying cannot be made to pay. We believe that it can be made to pay almost at once, if the routes are carefully chosen. We have little hope of flying being made to pay on the London-Paris route, for instance, but we have every confidence that it will pay on the Empire air routes. That is why we hail the flight to India as likely to prove one of the most important milestones in the history of British Empire Commercial Aviation.

* * *

And at the other End of the Scale

By a curious coincidence, almost at the same time that the great "Hercules" commercial aeroplane reached Delhi the two de Havilland "Moths" piloted by Mr. Stack and Mr. Leete arrived at their destination, Karachi. Although these two little aeroplanes were not being flown to any fixed time-table, their performance is, in its way, as meritorious as that of the powerful machines. For the first time in history two aeroplanes of such low power have set out in company and have crossed seas and mountains, forests and deserts, on a flight of well over 5,000 miles. The two intrepid pilots deserve the thanks of British aviation for their splendid feat. The proof of the capacity of the low-power aeroplane for hard work, coming as it does almost simultaneously with the announcement of a reduction to £730 for the "Moth" fitted with the Mark II "Cirrus" engine, cannot fail to have a very pronounced influence on the future of private flying. Thus, in one week we have the two extremes, as it were, of civil aviation "making good." Truly, the outlook for 1927 is extremely promising.

In view of the fact that the "Moth" has not been in existence for more than a couple of years this reduction in price is all the more gratifying, especially as the more powerful Mark II "Cirrus" engine is being standardised which, with more power and less weight, gives the "Moth" a considerably better performance, especially in the matter of take-off and climb. That it has reached the same high standard of reliability as that for which the Mark I was famous seems to have been definitely proved by the flight to Karachi, during which, as far as can be gathered, the "Cirrus" engines gave no trouble whatever.



["FLIGHT" *Photographs*

THE "CITY OF DELHI": These three views show the actual de Havilland "Hercules," with three Bristol "Jupiter" engines, on which Sir Samuel and Lady Maud Hoare and Air Vice-Marshal Sir Geoffrey Salmond made the flight from London to India. Upon its arrival the machine was christened "City of Delhi."

ENGLAND TO INDIA BY AIR

The First Imperial Air Route Successfully Inaugurated

ENGLAND to India by air as a practical commercial proposition will have to be recorded as the first outstanding aeronautical milestone for the year 1927. Incidentally, also, flying between these two countries by the private owner of the light 'plane; for the first week in the New Year saw the two extremes in aerial transport between the Mother Country and India accomplished in a highly-successful manner.

We refer, of course, firstly, to the conclusion of Sir Samuel Hoare's and Lady Maud Hoare's flight from Croydon to Karachi, thence to Delhi, in the Imperial Airways D.H "Hercules" (3 Bristol "Jupiter" engines) air liner, which flight inaugurated the first Imperial Air Route between Cairo and Karachi; and, secondly, to the "impromptu" flight from London to Karachi by Capt. T. N. Stack and Mr. B. S. Leete, of the Lancashire Aero Club, in two D.H. "Moth" light 'planes fitted with A.D.C. "Cirrus" engines.

It is not our intention to dwell here upon the merits or general aspect of these flights, as we have already referred to this side of the subject in our Editorial Comment this week, so that we can confine ourselves in the following article to a record of the actual happenings of both events.

Last week we recorded the progress of the D.H. "Hercules" air liner carrying Sir Samuel Hoare and party from Croydon to Jask on the Persian Gulf, with only the tenth stage to Karachi and final trip to Delhi to be completed. We need not, therefore, refer in detail now to this portion of the flight, but we may, we think, be permitted to repeat the daily point-to-point progress.

Before doing this, however, we would like to emphasise the fact that, except for the tenth stage from Jask to Karachi, the whole trip was carried out according to pre-arranged schedule, and where at one or two points along the route weather conditions did their best to upset arrangements, skilful piloting and navigating enabled matters to be carried out more or less "according to plan."

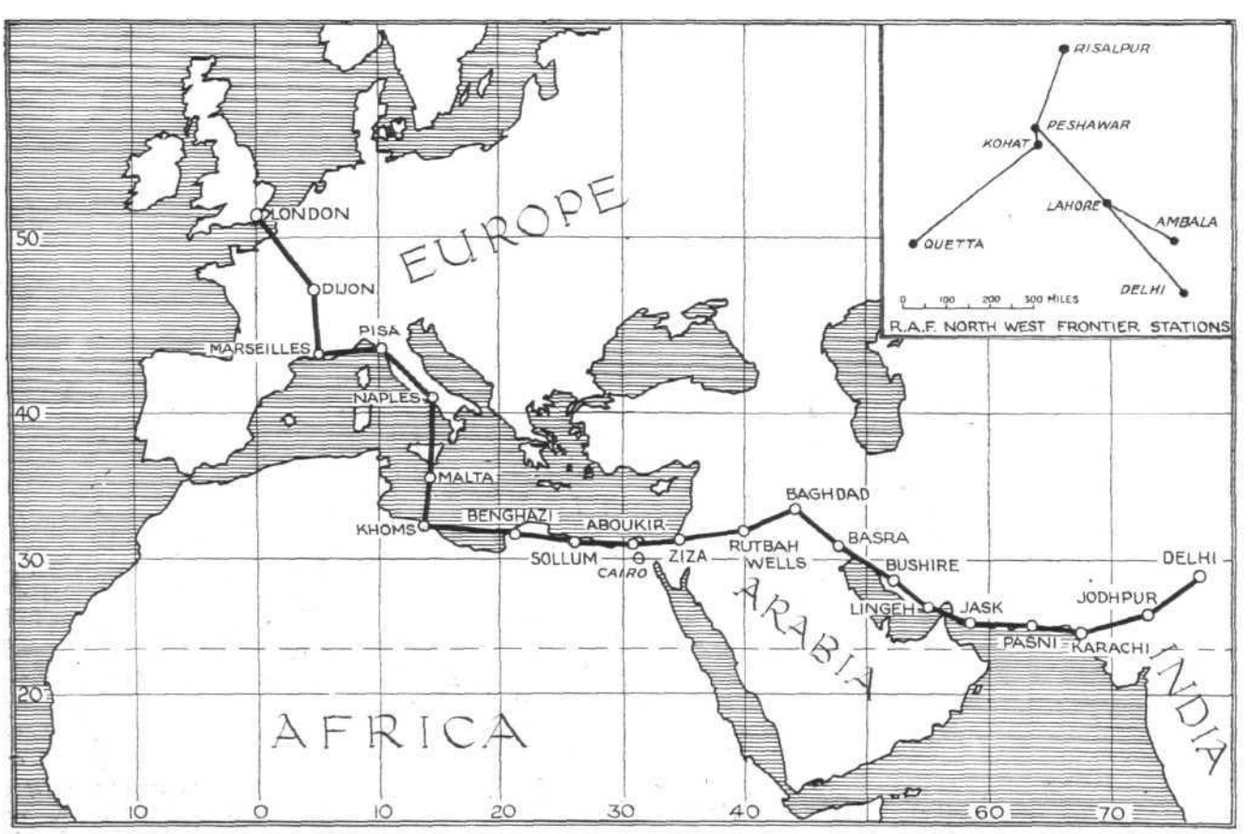
The following is an abbreviated log of the flight from start to finish (see also the accompanying sketch map of the route):—

Dec. 27, 1926.—Croydon to Marseilles *via* Dijon (641 miles).
Dec. 28, 1926.—Marseilles to Naples *via* Pisa and Capua (574 miles).
Dec. 29, 1926.—Naples to Malta *via* Catania (410 miles).
Dec. 30, 1926.—Malta to Benghazi *via* Khoms (580 miles).
Dec. 31, 1926.—Benghazi to Aboukir *via* Sollum (650 miles).
Jan. 1, 1927.—Aboukir to Ziga (Gaza) (360 miles).
Jan. 2, 1927.—Ziza to Baghdad *via* Rutbah Wells (543 miles).
Jan. 3, 1927.—Baghdad to Bushire *via* Basra (520 miles).
Jan. 4, 1927.—Bushire to Jask *via* Lingeh (556 miles).
Jan. 5, 1927.—Left Jask for Karachi, but had to return owing to sandstorm.
Jan. 6, 1927.—Jask to Karachi *via* Pasni (600 miles).
Jan. 7, 1927.—Karachi to Jodhpur (390 miles).
Jan. 8, 1927.—Jodhpur to Delhi (300 miles).

Capt. F. L. Barnard piloted the machine from Croydon to Aboukir, after which Capt. Wolley Dod took charge. The navigator throughout the trip was Sq.-Ldr. Johnstone, navigator of the airship R.33. As previously stated, the "Hercules" air liner kept remarkably close to the scheduled times for the journey of over 6,000 miles. At Malta it was 40 mins. late, but was 10 mins. ahead of time at Aboukir. It was an hour early at Baghdad, half an hour late at Bushire, but was again 10 mins. ahead of time at Lingeh. The day lost at Jask was made up by a shortened stay at Karachi, and a very speedy flight to Delhi, which was reached exactly to the time fixed for its arrival—12.30 p.m.. In fact, it may be mentioned that having time to spare over certain parts of the route opportunity was taken to make detours over points of interest, and to carry out experiments, such as flying on one engine, etc.

Shortly after leaving Jask for Karachi on January 5, the machine encountered what was at first thought to be a local mist, but climbing to 5,000 ft. in the hope of getting above it, only made matters worse, for it proved to be a severe and wide-spread sandstorm. The pilot considered it was unwise to proceed under these conditions, and therefore decided to return to Jask. To do so they had to turn seawards, in order to avoid running into uneven ground as they had to fly very low—little more than 25 ft. above sea level—to take bearings. A thrilling flight was thus made, following the coast line until a safe landing was once again made at Jask.

This stage was, however, successfully accomplished the following day, and, escorted by two R.A.F. machines from Pasni—where a stop for lunch was made—the "Hercules" air liner arrived at Karachi just before sunset, being observed



THE FIRST IMPERIAL AIR ROUTE: Sketch map showing the route taken by Sir Samuel Hoare during the inaugural flight from Croydon to India. Inset, the R.A.F. (India) Stations Sir Samuel will visit.

by the large crowd gathered on the aerodrome only at the last minute as the air was still heavily laden with dust from the previous day's sandstorm.

Sir Samuel Hoare and party, who descended from the machine looking remarkably fresh, were received by the Commissioner in Sind, after which leading residents in Karachi were presented. Sir Samuel and Lady Maud Hoare personally thanked the pilot and navigator. Men of the R.A.F. Depot formed a guard of honour, whilst as the party arrived at the Government House, a salute was fired by the 13th Heavy Battery, Royal Horse Artillery. An Official Banquet was held at Government House in the evening.

Lady Maud Hoare stated that she had never experienced such a comfortable journey, either by train, sea or car. "Most of my time," said Lady Maud "has been occupied while in the machine in reading and writing letters, when I was not watching scenery as it passed beneath."

The journey to Karachi having thus been successfully accomplished and the Cairo-Karachi air service thereby officially opened, a start was made as early as possible the next morning for the final portion of the flight to Delhi. This was made in two stages, a stop for the night being made at Jodhpur on January 7. On landing at Delhi, at 12.30 p.m., on January 8, Sir Samuel Hoare and party were received by a large assemblage, which included Field-Marshal Sir William Birdwood, members of the Viceroy's Council, the Chief Commissioner, Air Force and Military Officers, etc., and a crowd of about 4,000; a salute of guns was fired as the machine came gracefully to earth.

After the official reception Sir Samuel and Lady Maud Hoare drove to the Viceregal Lodge, where a letter from the King was handed over to the Viceroy, to which the following telegram was sent in reply:—"Your Majesty's historical letter was punctually delivered to me by Sir Samuel Hoare at 1 o'clock to-day. The journey he and Lady Maud Hoare have just completed has been the happy means of conveying to a Viceroy the first letter ever received by air from His Majesty the King-Emperor and of developing a new way of communication of far-reaching Imperial significance. Your Majesty's gracious message and the circumstances of the delivery have bound more closely than ever before the ties which unite two great capitals and two great peoples of your Majesty's Empire.—Irwin."

Sir Samuel stated that the flight had been a record one in many ways—first, because it was the first time that a woman had made a long journey in an aeroplane, and because Lady Maud Hoare was the first woman to arrive in India by air; secondly, because it was the first time that a Cabinet Minister had arrived in India by air; thirdly, because it was the first time that an Officer Commanding Air Forces in any part of the Empire had arrived by air to take charge of his command; and, lastly, because it was the first time that a commercial aeroplane had made the journey from England to India.

The King, he said, had taken the closest interest in the flight and had telegraphed to him the following message:—

"Hearty congratulations on your safe arrival in India after your most successful and enterprising flight. I hope you and Lady Maud have enjoyed your voyage."

Sir Eric Geddes, Chairman of Imperial Airways, sent the following cablegram to Sir Samuel Hoare:—

"The Board of Imperial Airways congratulate you and Lady Maud Hoare on the punctual completion of your six-thousand mile air journey, London to Delhi. As it was due to your Imperial outlook and determination that this commercial air link of the Empire communications was forged, it was indeed fitting that you should inaugurate the service by being its first passengers. That Lady Maud should be your fellow passenger gives ample proof to the world of your confidence in our organisation."

Sir Eric also received a letter from Capt. Hardinge, on behalf of the King, which states:—

"The King has followed with deep interest the initial flight on the Imperial Airways Service from London to Delhi, which, with but one deviation from the original programme, due to the sand storm at Jask, has to-day been brought to a successful conclusion.

"Such a feat augurs well for the future of the service, and, in the opinion of the King, reflects great credit on the organising staff of the Imperial Airways Company, as well as on the pilot and crew of the machine.

"His Majesty will be glad if you will convey his sincere congratulations to all concerned."

Messages of congratulations have also been sent to Sir Samuel Hoare from the Royal Aeronautical Society and the Royal Aero Club.

On January 10, at the Delhi aerodrome, Lady Irwin christened the D.H. "Hercules" air liner, "City of Delhi." In a short speech just before the ceremony Sir Samuel Hoare said that the Imperial Airways Company intended to name its aeroplanes after the capital cities of the countries along the route from Great Britain to India, and congratulated the historic city of Delhi on being the first to receive this honour.

The "Moths" Complete Their Task

WHILST the labours of "Hercules" were in progress the two members of the Lancashire Aero Club, Capt. T. N. Stack and Mr. B. S. Leete, were also making aeronautical history in their tiny D.H. "Moth" light 'planes fitted with "Cirrus," Mark II engines. As recorded in last week's issue, they arrived at Jask on January 4, the same day that the "Hercules" got there. Proceeding on January 6, they pushed on towards Charbar, where they arrived at 12.40 p.m. The following afternoon they proceeded to Pasni, but slight engine trouble caused them to return. They set out again, however, on January 8 and arrived that afternoon at their "secret destination"—Karachi. Thus concluded what is undoubtedly a record achievement for the light 'plane, for except for larger petrol tanks, the two "Moths" were standard machines (one, in fact, was the King's Cup winner, G-EMBO), and their owner-pilots had no elaborate preparations or petrol dumps ahead of them along the route, and acted as their own navigators and mechanics! However, we hope to deal in greater detail with this remarkable flight on a future occasion. We may add in conclusion that they have sent the following message to A.D.C. Aircraft, Ltd.:—"Congratulate you; 'Cirrus' wonderful all through."



Duralumin and Corrosion: This photograph shows one of the D.H.9 seaplanes used by the Air Survey Company in Malay, and the Eastern Manager of the Company reports that the condition of the Duralumin floats is good, and that beyond an occasional cleaning of barnacles from the bottoms the floats have given no trouble whatever. As the floats have had a thorough test in fresh and salt water under tropical conditions, this speaks well for the use of Duralumin, at any rate, as used by Short Brothers in the construction of seaplane floats.

A CZECHOSLOVAK ALL-METAL TWO-SEATER

The Vojenska-Smolik S. 16

AMONG the machines exhibited at the Paris Aero Show recently was an all-metal two-seater incorporating forms of construction of somewhat unusual type. This was the Vojenska Smolik 16, a long-distance reconnaissance biplane with 450 h.p. Lorraine-Dietrich engine. It was not possible to give a very detailed description of machines exhibited in Paris, but it is thought that a reference to the Vojenska S.16 may be of interest in showing how one Czechoslovak firm attacks the problems of metal construction. It should be pointed out, for the benefit of those who are not already aware of the fact, that the Vojenska Tovarna Na Letadla of Prague, is the Czechoslovak Military Aircraft Factory, and therefore corresponds somewhat closely to our own Farnborough establishment as it was when it was called the Royal Aircraft Factory.

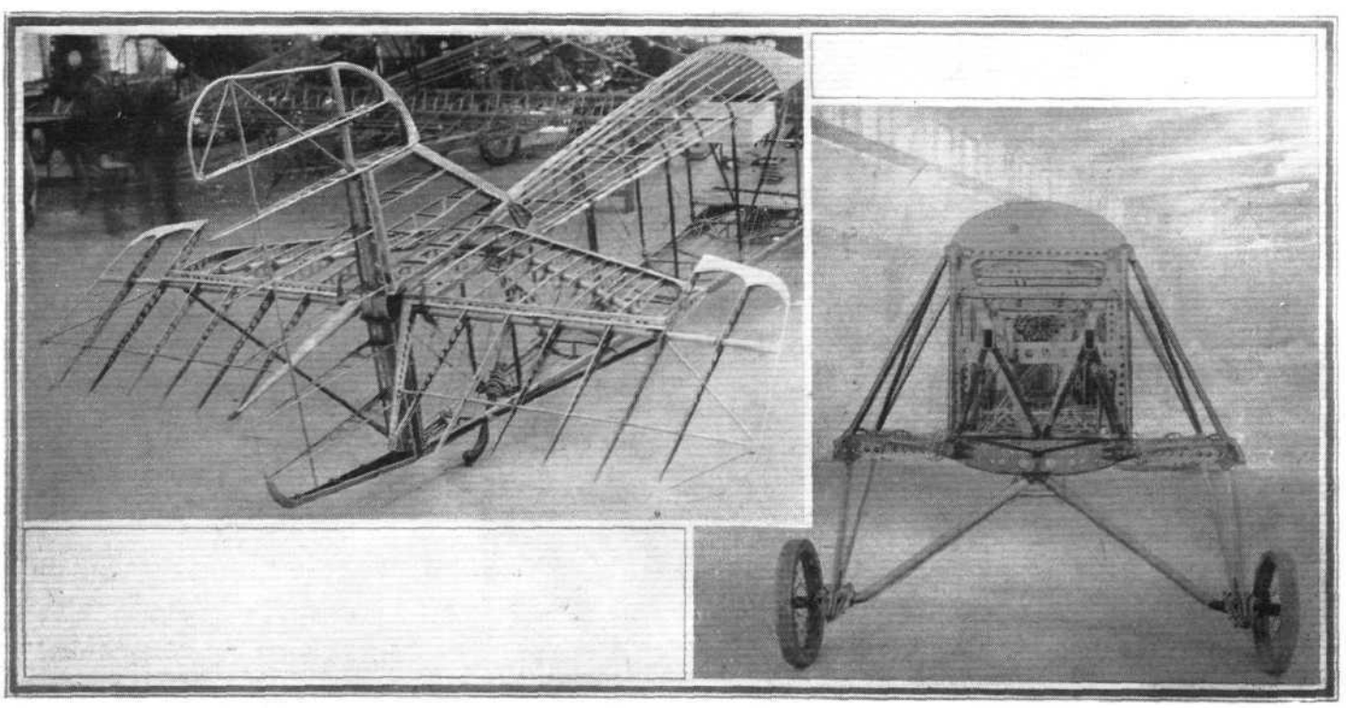
The Vojenska S.16 is produced in two forms, the parent type being a long-distance reconnaissance machine, while the type 16b is a day-bomber. The constructional details are the same in both cases, only the equipment (and certain minor alterations) being different. Aerodynamically the S.16 is an orthodox biplane, the only unusual feature being that in spite of a wing span of 15·5 m. (50 ft. 10 ins.), but a single pair of interplane struts are provided on each side. The chord is relatively narrow, giving the wings a high aspect ratio (the "span-loading," or span square divided by weight) is 0·52 in British units. The great length of unsupported spar, or free spar lengths, is somewhat relieved by a form of strut bracing used in England mainly on torpedo 'planes.



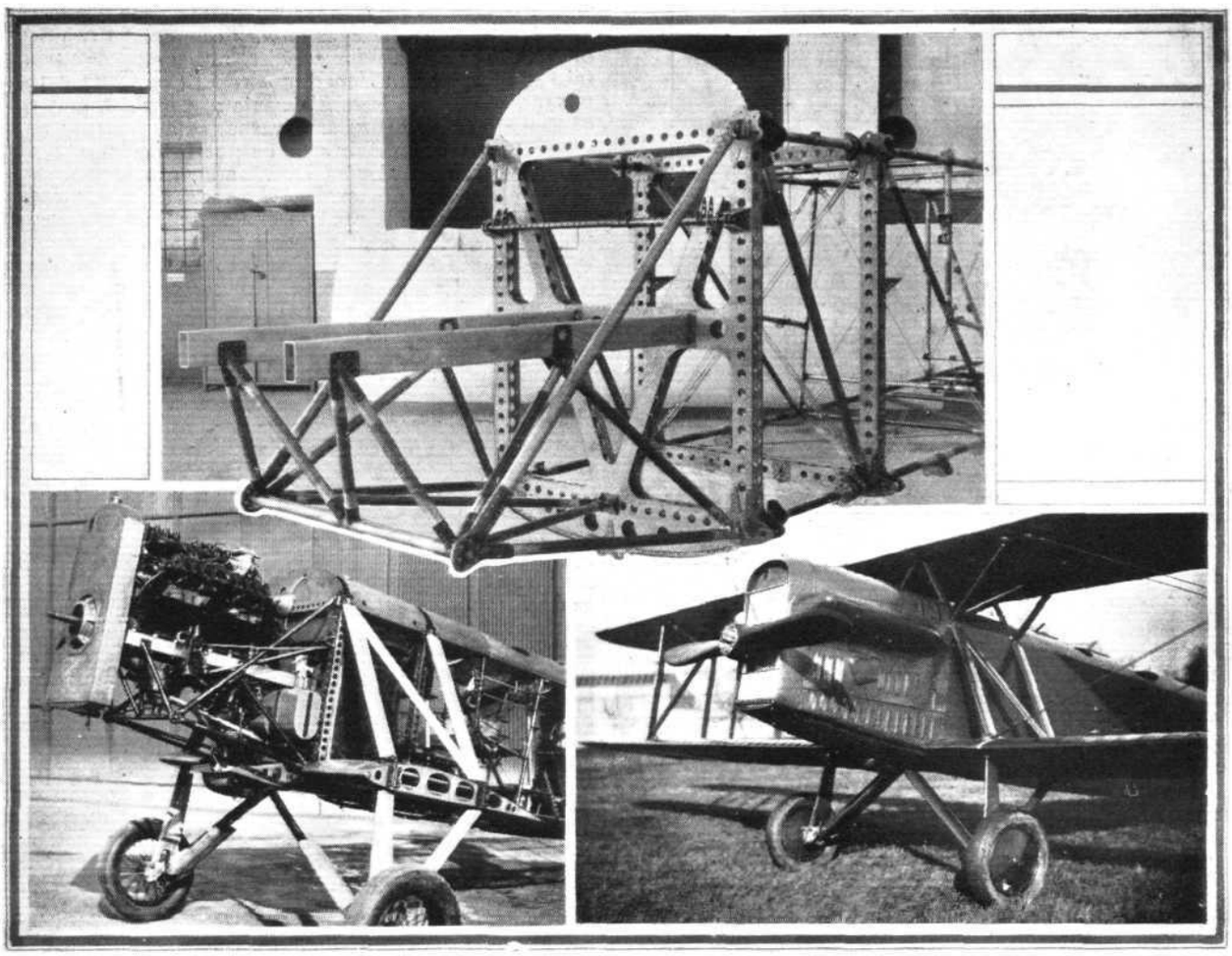
AN ALL-METAL CZECHOSLOVAK MACHINE : The Vojenska-Smolik S.16 is a long-distance reconnaissance two-seater or day bomber. Three-quarter front view.

As regards its main structure the S.16 is of mixed construction in that the fuselage is of steel tube construction while the wings are of Duralumin. All surface covering is in the form of doped fabric.

The fuselage is composed of three separate units—the front portion in which is comprised the engine mounting, etc., a middle portion containing the two cockpits, and the tail

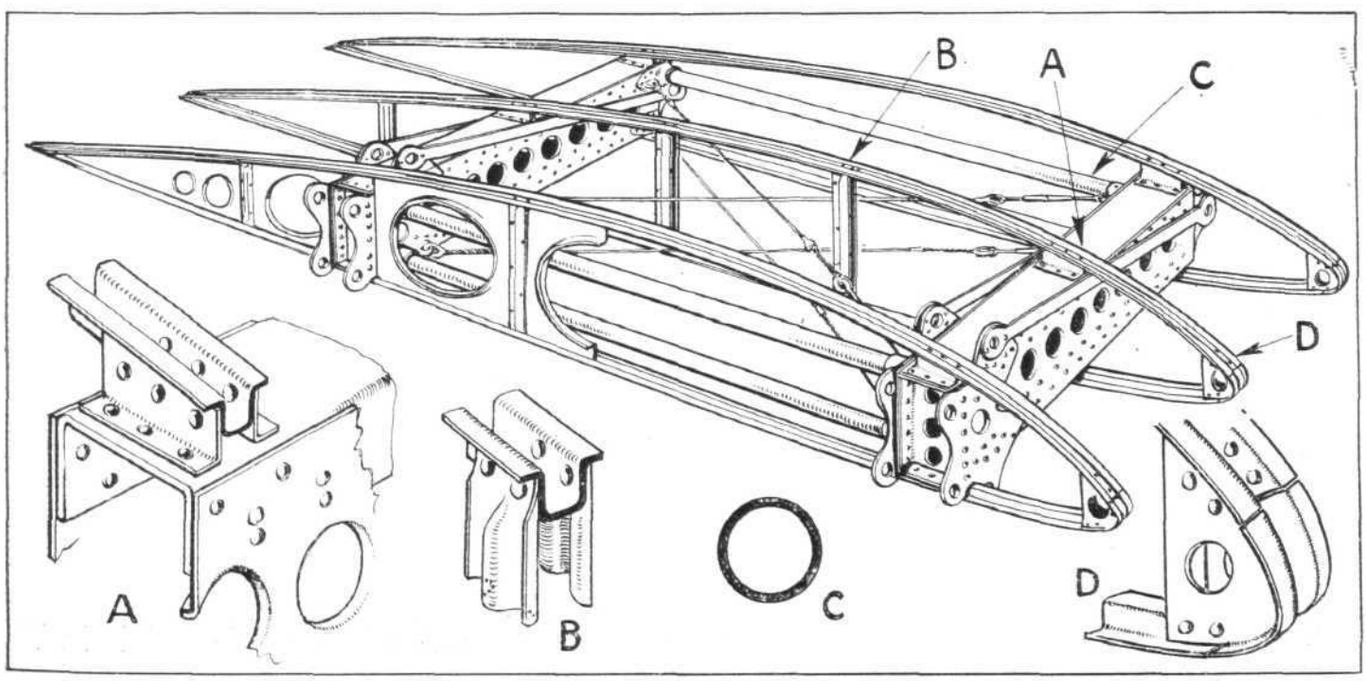


THE VOJENSKA S.16 : On the left, the all-metal tail, and on the right a front view of the fuselage in skeleton.



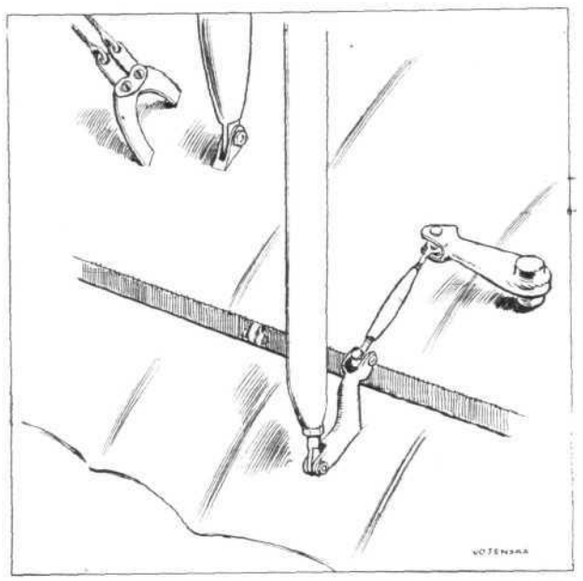
THE VOJENSKA S16 : These three photographs show progressively the engine mounting, the same with engine installed, and the complete machine.

portion, which is a plain wire-braced girder, in which the vertical and horizontal struts are pin-jointed to the tubular longerons, no welding being employed for parts that have to resist stresses of any magnitude. The cockpit portion of the fuselage is partly wire braced and partly triangulated by diagonal tubes, while the front has built-up bulkheads in place of the normal tubular members. The construction of these bulkheads or formers can be seen in one of our photographs. They are of box section, lightened by drilling numerous holes. A double fireproof bulkhead separates the engine from the next compartment, which contains the main petrol tank. This has a capacity of 400 kgs. (880 lbs.),



["FLIGHT" *Copyright Sketches*

Constructional details of the wing structure of the all-metal Vojenska S.16.



The ailerons of the Vojenska S.16 are operated by a somewhat unusual arrangement of cranks.

and is covered with rubber as a protection against bullets. A service tank with a capacity of 174 kgs. (383 lbs.) is placed in the centre of the top plane, giving a total petrol capacity of 574 kgs. (1,263 lbs.), which is sufficient for a flight of 5½ hours at full power.

The wing construction, as already mentioned, is based upon the use of Duralumin. The main spars—which, incidentally, are identical in both wings and front and rear spars alike—are of plain box type, not the drawn rectangular type of Duralumin spar which was so popular with French designers some years ago, but a built-up box. The wing construction is fairly clearly shown in some of our sketches, which also illustrate the spar details. It seems doubtful whether this form of spar is very economical from the point of view of strength for weight, although doubtless it is a fairly cheap manufacturing proposition. The length of unsupported spars is considerable in the S.16, and the angle of the wing bracing wires is rather small, so that one would expect compression loads to be not inconsiderable.

The wing ribs, also of Duralumin, are of trough section, the edges facing outward. The manner of attaching them to the spars is illustrated in our sketches. The actual wing portion sketched is the starboard lower plane wing root, which runs from the fuselage to the attachment of the diagonal struts supporting the undercarriage. All the main fittings, it should be pointed out, are of steel, such as the long straps shown in the sketch, the lugs for attaching the spars to fuselage and outer spars, the spar end boxes, etc. In the ribs illustrated the upper and lower flanges are braced by vertical distance pieces only, but in the main ribs these, although fundamentally of the same type, are arranged in the form of a Warren girder so as to provide triangulation. One would imagine that in spite of standardisation of a great number of small parts the method of supporting the ribs from the spars would be somewhat expensive. Compared with certain French and other forms of metal construction, that employed by the Vojenska firm appears fairly simple and cheap, and it is believed that the particular type of construction has given good results in actual service. The main point is that Czechoslovakia has definitely entered the field of metal construction on original lines, and doubtless the future will see considerable progress in this direction.

The main data relating to the Vojenska S.16 have already been published in FLIGHT, and also in the table of particulars given in the last issue of THE AIRCRAFT ENGINEER. It will, therefore, suffice if we recall here that the machine has a top speed of 225 km./h. (140 m.p.h.), a service ceiling of 6,500–7,000 m. (21,300–22,900 ft.), and that the duration is 5·5 hours at full throttle, corresponding to a radius of 1,237 km. (770 miles). The weight empty is 1,200 kgs. (2,640 lbs.), and the total loaded weight 2,250 kgs. (4,950 lbs.).

LIGHT 'PLANE CLUB DOINGS

London Aeroplane Club

THE total flying time for the week ending January 9, 1927, was 23 hrs. 10 mins. Unfortunately, one of the solo "Moths" was out of action during the week-end, and many soloists were disappointed.

The following members had flying instruction :—C. G. Miesegaes, E. D. Moss, J. H. Saffery, G. H. Saxon Mills, E. J. B. King, L. R. Winter, G. M. Randall, R. Malcolm, A. J. Richardson, H. B. Maddocks, H. Solomon, Lieut.-Comdr. Mackintosh, E. R. Wilson, M. P. Susman, F. C. Elford, J. J. Hofer, H. O. Gugenheim, T. W. G. Eady, D. H. P. Esler, Miss Fletcher, H. M. Samuelson, F. Clarkson.

The following members flew solo :—O. J. Tapper, Lieut.-Comdr. Mackintosh, H. Spooner, C. E. Murrell, S. O. Bradshaw, R. Malcolm.

The following members had joy rides :—Miss Mackintosh, D. A. Wilson, E. G. Denton.

The Club has acquired G-EBKT to replace G-EBNP, crashed in November last, and delivery will be taken this week.

The Hampshire Aeroplane Club

REPORT for week ending January 7, 1927

Total flying time, 8 hrs. 10 mins. Instruction flying, 3 hrs. 10 mins.; passenger flying, 1 hr. 30 mins.; solo flying, 3 hrs. 30 mins.

The following members had instruction :—Stokes, 1 hr.; Cooper, 40 mins.; Shepherd, 20 mins.; Southcliffe, 20 mins.; Nicholson, 20 mins.; Perfect, 10 mins.; and Lieut. Graham, R.N., 20 mins.

The joy-riders were :—Mrs. Fry, 1 hr.; Miss Fry, 20 mins.; and Mr. Cadell, 10 mins.

The soloists were :—Perfect, 1 hr. 30 mins.; Fry, 1 hr.; Cooper, 15 mins.; Keeping, 15 mins.; Rumble, 10 mins.; Flying Officer Mellor, 10 mins.; Nicholson, 5 mins.; and Shepherd, 5 mins.

Two soloists were launched, viz., Cooper and Shepherd, and both put up an excellent show.

It is worth recording that Cooper, who is in the employ of Messrs. A. V. Roe & Co., Ltd., at Hamble, has received all his flying instruction during lunch hours, and has never flown in Club machines at any other time, which shows what "a few minutes a day" will do.

On Tuesday, Messrs. Fry and Perfect passed the qualifying tests for their "A" licences.

The Lancashire Aero Club

REPORT for week ending January 8, 1927.—Total flying time for the week was 12 hrs. 25 mins., made up as follows :—*Dual* with Mr. Brown : Messrs. Slater, 30 mins.; Dickinson, 20 mins.; Forshaw, 20 mins.; Gatterall, 20 mins.; Newton, 20 mins.; Keays, 20 mins.; Anderson, 15 mins.; Dobson, 15 mins.; Goodyear, 15 mins.; Fallon, 15 mins.

With Mr. Cantrill : Messrs. Leigh, 20 mins.; Forshaw, 10 mins.

Solo : Messrs. Birley, 1 hr. 10 mins.; Michelson, 50 mins.; Slater, 30 mins. Twemlow, 25 mins.; Leeming, 20 mins.; Hardy, 15 mins.; Fallon, 10 mins.

Joy rides : with Messrs. Cantrill, Leeming, Costa, or Lacayo :—Mrs. Birley, Miss Tweeny, Messrs. Adriao, Quinn, Hartley, Thorpe, Abdulla, Macbroom, Smith, Walters, Dickinson, Jones, Lacayo, and Bute.

Tests occupied 50 minutes.

The Midland Aero Club, Ltd.

REPORT for week ending December 25, 1926.—The total flying time was 3 hrs. 45 mins.

The following members made solo flights :—H. J. Willis, E. J. Brighton, R. L. Jackson, W. Swann, J. Brinton, and A. M. Glover. Mr. E. J. Brighton made flights with passengers.

Unfortunately Capt. McDonough injured his arm while starting up his car, so that no dual instruction was possible.

Report for week ending January 1, 1927.—The total flying time was 5 hrs. 15 mins.

The following members made solo flights :—A. M. Glover, J. Brinton, G. V. Perry, W. Swann, R. L. Jackson.

Mr. C. Fellowes was given dual instruction.

The Austin Whippet was flown by A. M. Glover and G. V. Perry.

Report for week ending January 8.—The total flying time was 3 hrs. 20 mins.

The following members made solo flights :—E. J. Brighton, H. J. Willis. Mr. Brighton made two flights with passengers.

The following were given dual instruction :—H. J. Willis, G. Aldridge, C. Fellows.

Test flights occupied 20 mins. Very poor visibility restricted flying.

Royal Aero Club Monthly House Dinner

THE next Monthly House Dinner of the Royal Aero Club will be held at 3, Clifford Street, London, W.1, on Wednesday, 19th inst., at 7.15 p.m. The subject of "Aviation" will be opened by Mr. C. R. Fairey. Members wishing to attend are requested to notify the club at the earliest possible moment.

Capt. Barnwell's Paper

WE wish to remind readers that Capt. F. S. Barnwell, O.B.E., A.F.C., is reading a paper entitled "Some Notes on Design of Airscrews" before the Inst. of Aeronautical Engineers on Jan. 25. Dr. H. C. Watts, D.Sc., etc., will preside, and the paper will be illustrated with lantern slides.

Royal Air Force Memorial Fund

THE Grants Sub-Committee met at Iddesleigh House on January 6.

Lieut.-Comdr. H. E. Perrin was in the chair, and the other members of the committee present were : Mrs. L. M. K. Pratt-Barlow, O.B.E.; Sqdn.-Ldr. Douglas Iron, O.B.E.

The Committee considered in all 16 cases, and made grants to the amount of £70 5*s.* 6*d.*

Next meeting, Thursday, January 20, at 2.30 p.m.

FLIGHT
AIRCRAFT ENGINEER AIRSHIPS

THE R.A.F. CAIRO-CAPE FLIGHT

Official Report on the Big 14,000-Mile Flight

(*Concluded from p. 7.*)

IN our issue for January 6, 1927, we dealt with the outward section of the R.A.F. Cairo–Cape Flight, and this week we conclude with a brief résumé of the log of the return journey to Cairo, and thence to England, from the official report. A week was spent at Cape Town before the flight started for home on April 19.

Return Flight

21st Stage, April 19–20—Cape Town–Victoria West, (333 miles). Time, 3 hrs. 6 mins.

[Flight took off in formation, saluting His Excellency the Governor-General, who was present to see the departure.]

22nd Stage, April 20–22. Victoria West–Kimberley (207 miles). Time 2 hrs. 38 mins.

[Owing to the sand, the flight took off singly, and after falling into formation over the aerodrome, made for Kimberley via the Orange River, near Hope Town. Weather superb, with extreme visibility.]

23rd Stage, April 23–May 3—Kimberley–Pretoria (294 miles). Time, 3 hrs. 28 mins.

[Journey uneventful except for bumps in middle of the day. At Pretoria opportunity was taken thoroughly to overhaul the machines, controls being renewed where necessary, etc. As the return flight included Nairobi, a new time-table was prepared, and since most of the country was the same as that already passed over the return flight is only briefly described.]

24th Stage, May 3–5—Pretoria–Bulawayo, via Palapwe Road.

25th Stage, May 5–6—Bulawayo–Livingstone.

26th Stage, May 6–7—Livingstone–N'Dola, via Broken Hill.

27th Stage, May 7–9—N'Dola–Abercorn.

28th Stage, May 9–11—Abercorn–Tabora.

29th Stage, May 11–12—Tabora–Kisumu.

[When in a mountainous area, 80 miles south of Kisumu, the flight ran into a series of blinding rain storms, which reached as far as Kisumu. When not in rain, low clouds were encountered which were down to the ground in places. Thus collisions with the sides of the hills and the tops of the trees were only narrowly averted. On arrival at Kisumu, it was found that the fabric on the airscrews of 1102, 1104 and 1105 had in places started to strip.]

30th Stage, May 12–15—Kisumu–Nairobi (178 miles). Time, 2 hrs. 7 mins.

[The course to Nairobi lay via Mau Summit (10,500 ft. above sea level) past Nakuru and over Lake Naivasha. It rained most of the time at Nairobi, and the natives gave the Flight a variety of names, such as " The Birds " " The King's Birds," and some even went so far as to call them " Matthew," " Mark," " Luke," and " John."]

31st Stage, May 15–18—Nairobi–Kisumu.

[The aerodrome was water logged, and columns of spray rose as each machine took off. Owing to low clouds everywhere the course was shaped west, south of the N'Gong Hills, then north via Kerocho Valley. Heavy bumps were encountered. A passenger during this trip was a snake, which found a seat on the spokes of the leader's port wheel.]

32nd Stage, May 18–19—Kisumu–Jinja (116 miles). Time 1 hr. 24 mins.

[A start was made for Mongalla via Jinja at 0636, but at 0720 the Flight was compelled to turn back owing to heavy rain storms. A fresh start was made at 1418. The previous night's storm had brought down the wires between Kisumu and Jinja, so all telegrams for Uganda from Kenya were taken by the flight.]

33rd Stage, May 19–20—Jinja–Mongalla (346 miles). Time, 4 hrs. 12 mins.

[Ground mist—little of intervening country seen. Landing ground at Mongalla very soft, and No. 1104 became bogged while taxying in and again when taking off next morning.]

34th Stage, May 20–21—Mongalla–Malakal.

35th Stage, May 21–23—Malakal–Khartoum.

36th Stage, May 22–25—Khartoum–Atbara.

37th Stage, May 25–26—Atbara–Halfa.

38th Stage, May 26–27—Halfa–Assiut.

After leaving Aswan for Assiut, flight had to turn back owing to falling oil pressure in Nos. 1104 and 1105. The leader's report states :—" On landing a second time there was nobody at the aerodrome, and we could not open the petrol store. As there was a strong head wind, it was essential to put in the amount of petrol used on the abortive flight. After having waited three hours for someone to arrive, I gave orders for the door to be broken down. This could not be done. . . . Finally, in desperation, I bought 32 galls. of M.T. spirit in the Aswan bazaar and had that put into the tanks. Aswan was finally left at 13.58, Assiut being reached at 16.58. It was very hot when we took off, water rising to 96° and oil to 74° before reaching cooler air at 5,000 ft. Over Sohag it looked as if another sandstorm was coming on, and, although we were at 7,000 ft., it was extremely bumpy. No. 1105 was thrown about to such an extent that a flying wire parted. Later we found that we had passed over a small sand-storm. All aeroplanes nearly crashed on landing at Assiut owing to striking ridges which were not marked and could not be seen from the air."

Final stage, May 27–29.—Assiut–Heliopolis.

Heliopolis was reached in 2 hrs. 30 mins. When near Helwan an escort from Heliopolis joined the flight and took station on either quarter.

The Flight Home

The route selected was : Aboukir, Sollum, Suda Bay (Crete), Phaleron Bay (Athens), Corfu, Brindisi, Naples, Orbetello, Berre (nr. Marseilles), Cette, Houstin (nr. Bordeaux), Brest, Lee-on-Solent.

The land flight having finished at Cairo (May 27), the flight flew to Aboukir on May 29, where work was at once started on overhauling the aeroplanes, fitting floats, etc.

Aboukir was left on June 9 at 10.15, and the flight arrived, according to programme, at Lee-on-Solent on June 21, at 13.02. The total time taken by the four machines over this part of the route was approximately 164 hrs. The actual time for the leader's machine was 40 hrs. 30 mins. Except for an airscrew changed on one machine at Berre, no major repairs were necessary.

The programme was adhered to with one exception, but this was only made possible by the efficiency of the ground organisation prepared in advance, together with the help which was received at every place. The Greek, Italian, and French authorities were particularly helpful.

The flight experienced good weather until they reached Berre . . . On the morning of departure it was blowing nearly a full gale from the N.N.W. Berre is situated in a lake ; this enabled the machines to take off, but as the wind was dead ahead and continued without abating the whole day, a stay was made at Cette. Next day, though still blowing hard, a start was made for Hourten.

At Toulouse the wind dropped and fog was encountered, forcing the flight to fly at about 100 ft. down the Garonne to Bordeaux, where the fog lifted. Between Brest and Lee-on-Solent fog was again met with, necessitating the Channel being crossed at about 50 ft. until the Needles were sighted. Except for the flight from Brest to Lee head winds were encountered all the way home.

When crossing the mountains of Calabria, between Brindisi and Naples, a curious phenomenon was experienced. At a point about 6 miles east of the main ridge the leader's machine, for no apparent reason, lost height rapidly. Although the engine revolutions were 1,760 when the aeroplane commenced to lose height at 8,000 ft., it only stopped sinking at 6,800 ft. when the revolutions were increased to 1,950. It is assumed that the machine must have struck a down current of air (a head wind was blowing) as after about 10 mins. it started to climb again with revolutions reduced to 1,800. The bumps over Calabria proved bad.

Conclusion

The engine times for the four machines were as follows :—No. 1102, 186 hrs. 48 mins. ; No. 1103, 190 hrs. 0·07 mins. ; No. 1104, 184 hrs. 22 mins. ; No. 1105, 183 hrs. 24 mins. The total distance flown by each aircraft was approximately 14,000 miles.

Throughout the flight officers and airmen received a most hearty welcome at all places of call, and hospitality was lavished upon them.

The flight has been of great value to the R.A.F., as it has provided experience in long-distance flying over new country and through changing climates. It should clearly prove to the world in general the reliability and the efficiency of British aircraft and engines, and the high state of efficiency of the R.A.F., the objects of the flight having been completely achieved.

AIRISMS FROM THE FOUR WINDS

Cairo-Karachi Air Service

THE new Cairo-Karachi Imperial Airway Service between the Persian Gulf and Egypt commenced regular operations at 10 a.m. (Greenwich time) on January 7, when one of the five D.H. 66 "Hercules" machines with three 400 h.p. Bristol "Jupiter" engines left Basra for Baghdad and Cairo piloted by Capt. Warner. One passenger and 1,000 urgent mails, mostly destined for Great Britain from India, was the load carried. On this new established service the Imperial Airways liner is due to leave Basra every alternate Friday at 1 p.m. as a link with the fast steamers that bring the mails from India. Baghdad is a three hours' flight, and on Saturday morning the flight is extended along the desert route to Cairo, which up to now has been operated by the R.A.F. Vickers' machines for the air mails. For the first thee months Basra will be the end of the service in order to gain experience of the conditions prevailing before extending it to the full distance of 2,500 miles, which includes an isolated section. Also two more D.H. "Hercules" machines have yet to be delivered to organise an effective service. Going eastward, the first machine departs from Cairo on Wednesday, after which the fortnightly service will be regular and likewise linking with the fast steamers from England. The aerial route will mean a saving of four days on the journey to Baghdad and six days to Basra

Wireless Stations for Cairo-Karachi Route

A CHAIN of new wireless stations is to be erected on the Cairo-Karachi air route, according to arrangements carried out by the Air Ministry. At Karachi the station is to be provided by the Indian Government, and the Iraq Government will be responsible for the small Iraq station. These stations between Egypt and India will be at Heliopolis, Ismailia, Ziza (Gaza), Rutbah Wells, Ramadi, Baghdad, Shiebah (Basra), Bushire, Bandar Abbas, Charbar, and Karachi, superseding permanently those now in operation. They will also receive and transmit at all times during the air journeys.

Following in Father's Slipstream

THE two sons of Lord Stonehaven have inherited their father's enthusiasm for flying and have recently joined the Melbourne Aero Club, carrying out regular early morning flights. The light aeroplane movement is well established in Australia and receives the keenest support of the Governor-General, Lord Stonehaven, who has long adopted the air as his medium for travel. His lordship's example must inevitably be to the advantage of Australian aviation.

To Replace the "Shenandoah"

LIKE England, America has faced her disasters in airship development with high courage and optimism. The toll in life and cost has simply been regarded as the inevitable sacrifice of progress in dangerous activities from which lessons must be gathered and incorporated in the future. Thus the House of Representatives adopted on January 6 an amendment to the Naval Supply Bill providing for the construction of an airship to take the place of the "Shenandoah," which was wrecked in a storm on a long-distance flight across America in 1925. The new ship is estimated to cost £900,000.

A Schneider Cup Race this Year?

IT is very probable, as a result of a proposal put forward by Italy for an annual race, that the next Schneider Cup Race will be held this year instead of in 1928. Italy is no doubt anxious to repeat her remarkable success of the last race against America. There is much to be said for this proposal, which would maintain a wider and continued interest in the race. The Federation Aeronautique Internationale, who control the conditions of the race, and at their last meeting decided to hold the event every two years, are meeting in Paris on January 25 to make a definite decision on Italy's proposal.

The four keenest competitors for the next race, Great Britain, America, France and Italy, are preparing. It is very satisfactory to know that Great Britain has at least three high-speed seaplanes in the course of development with every possibility of being available in time.

Southampton-Cherbourg Service

THE projected scheme of Imperial Airways to maintain a regular service between Southampton and Cherbourg will not be possible till the French Government permits foreign aircraft to fly over Cherbourg, which is a naval defence port. The Chamber of Commerce of the port has been approached by Imperial Airways, Ltd., and are doing their best to persuade the Government to lift the ban. In view of the fact that occasional flights of convenience for belated American-bound passengers were willingly allowed, there ought not to be much difficulty in doing this. The service would operate to coincide with the arrival and departure of American-bound liners and, with the co-operation of the General Post Office, it would enable a later posting time for American mails.

Australian Air Services

NEW airports have been arranged at Rochester, Carrathool, Balrandald, Euston, Renmark, Swan Reach and Tartna Point by the Australian Aerial Services, Ltd. (Larkin), but the machines will only land at these places for the convenience of passengers when required. For the time being no mails or parcels will be accepted for air transport to these towns. On the Perth-Derby aerial service alterations have been made in the time table, and these will operate on and after January 1, 1927. The departure from Perth will be 6 a.m. Saturday instead of Thursday, and the return to Perth will be 2 p.m. Thursday instead of Tuesday. This will mean that the trip scheduled to leave Perth on December 30 was deferred to January 1, then will follow the stated Saturday departure. These changes also allow parcels for despatch by air to be received at Western Australia Airways, Ltd., 35, A.m.P. Buildings, Perth, up till 5 p.m. on Fridays.

Another R.A.F. Cairo-Cape Flight

PREPARATIONS are in progress for a second R.A.F. flight from Cairo to Cape Town. This will be undertaken by four Fairey-Napier III.F machines from No. 47 Squadron, under the command of Commodore Samson. Each machine will carry a passenger. A flight of South African Air Force machines will fly from the Cape and meet the south-bound Flight at Kisumu, then accompanying them to the Cape. The flight will start in March.

Canadian Air Mail Routes

SUBJECT to the approval of Parliament air mail routes will be established in Canada this year. Tenders are to be asked for from private flying corporations and preliminary work will be done under contract.

Khartoum-Kisumu Air Service

THE North Sea and General Transport, Ltd., have been loaned a seaplane by the Air Ministry with which the company will commence operations on the Khartoum-Kisumu service until the D.H.50 "Pelican," which was damaged during a test flight, has been repaired.

Swiss African Flight

LIEUT. MITTELHOLZER, who is engaged in an aerial scientific expedition to Africa, arrived in the Dornier "Mercury" seaplane at Jinja (Victoria Nyanza) on January 10.

Amundsen's Polar 'Plane

IT is reported that Herr Dornier has re-purchased the Dornier Wal flying-boat on which Amundsen attempted to reach the North Pole in 1925, and that this machine will be put into use on an air service to Great Britain.

A Harmony in Blue from Gloucestershire

AN extremely handsome souvenir has just been sent to us by the Gloster Aircraft Co., Ltd., of Cheltenham. This takes the form of a large (18 by 20½ ins.) coloured plate depicting the "Gloster III" seaplane (Napier "Lion") flying in the Schneider Cup race of 1925. It is realistically reproduced in full colours from an oil painting by Mr. Geoffrey Watson, whose aeronautical drawings are, no doubt, well known to many of our readers. The general effect of this picture is decidedly pleasing and might be described as a "harmony in blue"—the seaplane with its light blue fuselage, the blue sky only partly obscured with fleecy clouds, the blue sea with patches of sunlight, and the blue distant headlands. Additional "life" is given to the subject by the inclusion of a few sailing yachts in the middle distance. Altogether it makes a delightful decoration—especially when suitably framed—for any room or office.

AIR MINISTRY NOTICES TO AIRMEN

New Air Corridor on the Franco-Belgian Frontier. Le Bourget Aerodrome: Amendments

1. As the result of an agreement between the Belgian and French Governments a fourth air corridor has been added to the three existing air corridors of the Franco-Belgian frontier, viz. :—

Between Solre-le-Chateau and Florentville.

An amendment to the Air Pilot will be published in due course.

2. (2) *Le Bourget Aerodrome.—Air Sleeve.*—The air sleeve which was displayed in the E. corner of the aerodrome has been removed. It will eventually be re-erected in a position which will be notified.

(2) *Metal Hangar Dismantled.*—One of the small metal hangars in the E. corner of the aerodrome is being dismantled. Pilots are therefore warned that this hanger is no longer marked at night.

No. **84** *of* 1926.

Government-owned Aerodromes ; Prices of Petrol, etc.

1. THE following prices will be charged from January 1, 1927, and until further notice for aviation petrol and motor spirit issued for civil aviation at Government-owned aerodromes :—

Per gallon, exclusive of container: aviation mixture, 2*s.* 0½*d.*; aviation petrol, 1*s.* 10½*d.*; motor spirit—grade 1, 1*s.* 6½*d.*, grade 3, 1*s.* 4½*d.*

Prices for aviation petrol and motor spirit in Scotland, 1*d.* more in each case.

2. *Cancellation.*—Notice to Airmen No. 9 of 1926 is cancelled. (No. 1 of 1927)

Parachute Descents from Civil Aircraft

WITH reference to Notice to Airmen No. 56 of 1926 on the above subject, permission to carry out a parachute descent will not be granted unless the following conditions are satisfied :—

1. The parachute and harness must be of an approved type.

2. A ground engineer must be employed who is competent to inspect, pack and fit the parachute to the aircraft and to the parachutist concerned and whose licence has been endorsed to this effect.

Applications for verification of 1 above and for the endorsement of the ground engineer's licence specified in 2 should be addressed to the Secretary (C.A.2), Air Ministry, Gwydyr House, Whitehall, London, S.W.1.

No. 2 of 1927.

Pulham : Flying of Captive Balloons

CAPTIVE balloons are to be flown at Pulham Airship Station during January and February, 1927. The cables of these balloons are not marked, and pilots should therefore exercise the utmost care.

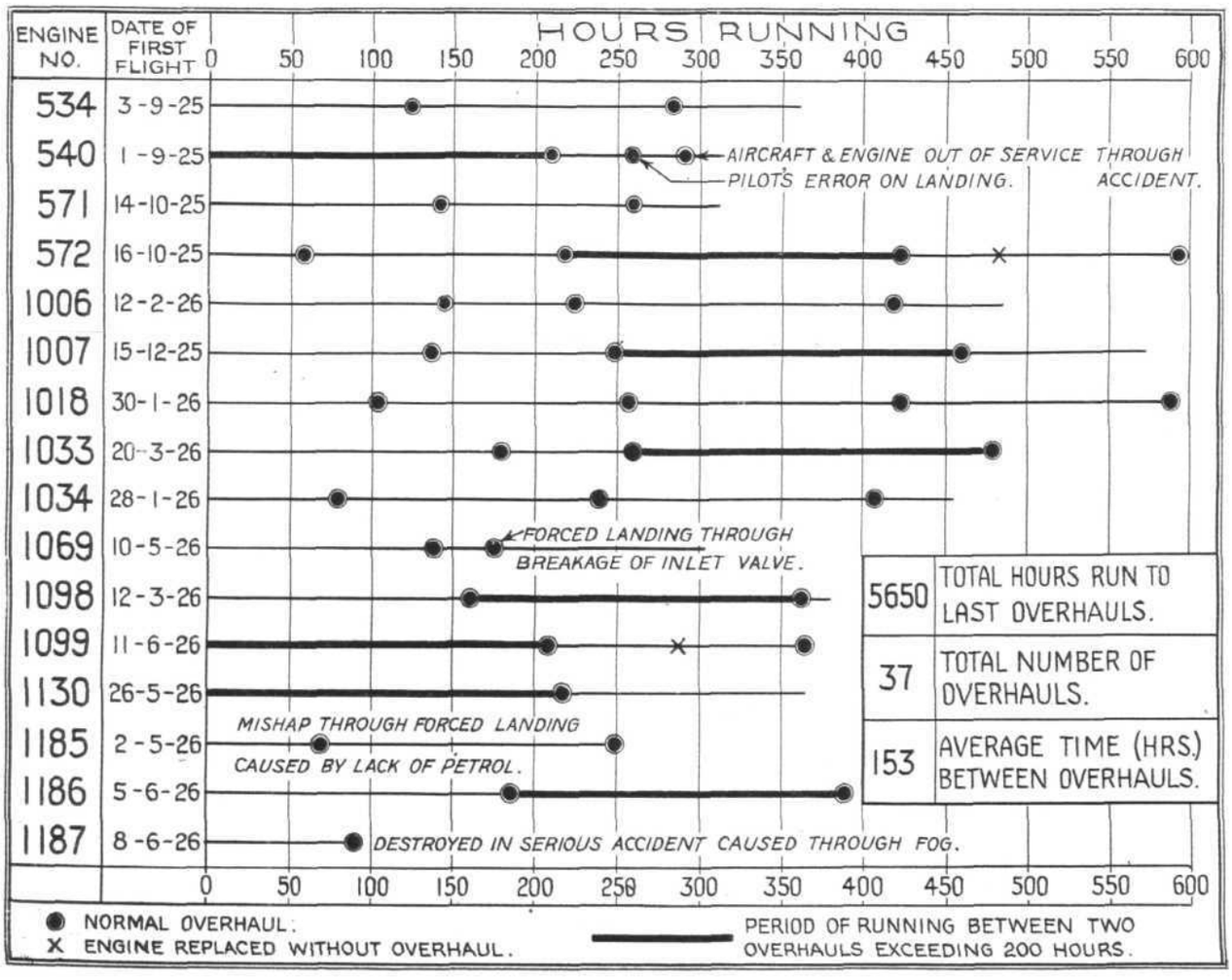
No. 3 of 1927.

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Air Pilot Relays S.O.S.

WHILE a U.S. Naval pilot from Pensacola air station was carrying out a flight recently, he picked up on his wireless an S.O.S. message from a tug which was foundering 20 miles off the coast of Florida. The pilot immediately relayed the message, which on being received at the station was conveyed to the owners of the tug. The tug sank, however, before help could reach it, but the crew was subsequently rescued.

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BRISTOL "JUPITERS" IN SERVICE : The above instructive diagram tells its own story, but it should be explained that it refers to the running of the 16 Series IV "Jupiters" fitted in the Fokker machines engaged in service on the K.L.M. (Dutch) air routes.

Personalities

Married

Capt. JOHN ARTHUR WATSON BOURNE, late R.F.C. and R.A.F., son of Mr. and Mrs. W. J. Watson Bourne, of Senhouse, Tamworth, was married on January 5, at Cerrig-y-Druidion, to MARJORIE, elder daughter of Mr. and Mrs. WILLIAM COTTLE, of Wallasey.

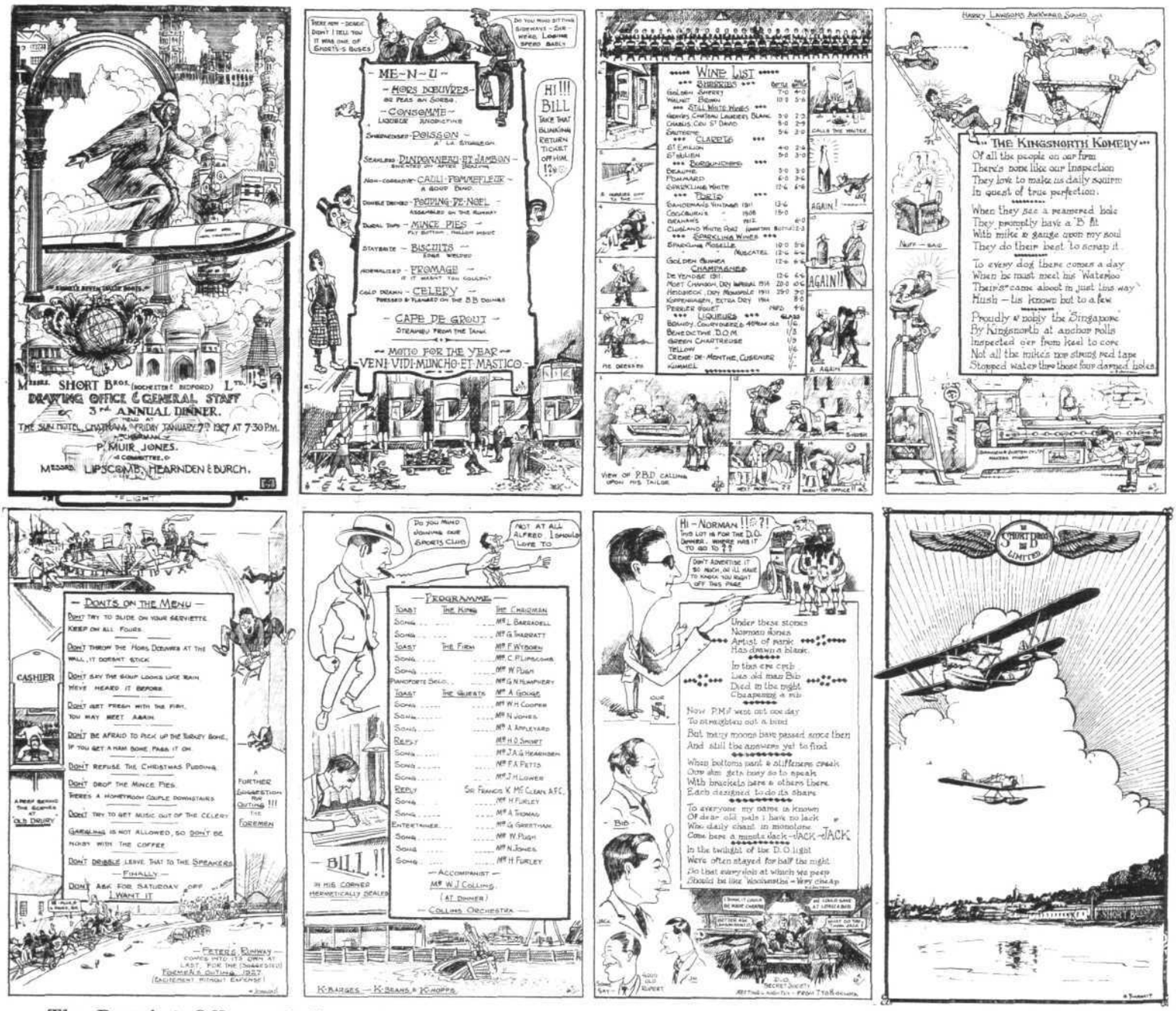
Capt. LINDSEY SPENCE WEEDON, late R.A.F., Barakat, son of the late Henry Weedon, Esq., and the late Mrs. Drury, of Oxford, was married at Khartoum, on January 5, to EILEEN MARY, daughter of late THOMAS COULTER DICKIE, Esq., and Mrs. Dickie, of Clonavon, Omagh.

To be Married

THE marriage arranged between JOHN D. ALLCROFT, R.A.F., elder son of Mrs. M. H. Allcroft, of Sowberry Court, Moulsford, Berks., and the late John D. Allcroft, and AGNES, daughter of the late Rev. JAMES GLOVER, and niece of Miss Hill, of Edinburgh, will take place on January 19.

The engagement is announced of Flight-Lieut. ROBERT ALLINGHAM GEORGE, elder surviving son of Mr. and Mrs. William George, of Invergordon, Ross-shire, and SYBIL ELIZABETH, second daughter of Mr. and Mrs. ARTHUR REGINALD, BALDWIN, of Caythorpe, Lincoln, late of Brough House East Yorkshire.

The engagement is announced between ARTHUR GREGORY GEORGE MARSHALL, only son of Mr. D. G. Marshall, O.B.E., and Mrs. Marshall, of Aviation Hall, Cambridge, and DOROTHY PLUME, youngest daughter of MR. G. P. HAWKINS, J.P., and Mrs. Hawkins, Gresham House Cambridge.



The Drawing Office and General Staff of Messrs. Short Bros., Ltd., of Rochester, held their Third Annual Dinner on January 7, amongst the guests being Sir Francis McClean, the Mayor of Rochester, Mr. H. O. Short and Mr. McIsaac, the resident D.T.D. representative. The function was very successful, the toast to the Firm being made by Mr. F. Wyborn and replied to by Mr. H. O. Short. The toast to the guests was proposed by Mr. A. Gouge, the Firm's Designer, and replied to in a very humorous speech by Sir F. McClean, who reviewed his early associations with the Short machines in 1909. His remarks concerning the "Double Dirty," the "Field Kitchen" and others of the early machines, caused much amusement. An "item" very much appreciated was the clever menu "card," which we reproduce (in miniature) above.

FLIGHT
THE AIRCRAFT ENGINEER AND AIRSHIP

THE ROYAL AIR FORCE

London Gazette, January 4, 1927

General Duties Branch

The following Pilot Officers on probation are confirmed in rank :—A. Allen, E. S. Baverstock, M. R. Edmondes (Sec. Lieut., R.A., T.A.), L. E. R. Fisher, M.C. (Lieut., R.A.R.O.), C. H. Hockly, A. M. D. Howes, G. H. G. S. Jenkins, W. E. P. Johnson, L. T. Keens, F. L. Lawrence, P. G. Lucas, L. G. Martin, A. L. Mortimer (Sec. Lieut., R.A., T.A.), K. C. Netherton, S. Pritchard-Barrett, H. J. G. E. Proud, B. F. O. Smith, R. H. C. Taylor, E. D. Turner ; Nov. 8, 1926. C. F. Ashton ; Nov. 9, 1926. E. L. Burslem ; Nov. 10, 1926. W. R. Baird ; Nov. 29, 1926. U. S. Mackay ; Nov. 30, 1926.

Flight-Lieut. A. T. Laing is placed on half-pay, scale B, from Dec. 28, 1926, to Jan. 15, 1927, inclusive. Flight-Lieut. C. R. Smythe takes rank and precedence as if his appointment as a Flight-Lieut. bore date July 1, 1926, immediately below Flight-Lieut. Hugh Nelson on the graduation list. Reduction to take effect from Dec. 23, 1926.

Flight-Lieut. A. C. Randall, D.F.C., is dismissed the service by sentence of General Court-Martial : Dec. 23, 1926.

Medical Branch

H. Penman, M.B., is granted a short service commn. as a Flying Officer, for three years on active list, with effect from and with seniority of Oct. 8, 1925, and is seconded for civil employment from Oct. 8, 1925, to Oct. 7, 1926, inclusive. (Substituted for *Gazette*, Oct. 26, 1926.)

Reserve of Air Force Officers

Flight-Lieut. P. A. de Fontenay, D.F.C., is cashiered by sentence of General Court-Martial ; Dec. 23, 1926.

Princess Mary's R.A.F. Nursing Service

The following Staff Nurses are promoted to rank of Sister :—Miss R. E. C. Polus ; Oct. 4, 1926. Miss L. H. Hardy ; Oct. 30, 1926. Miss O. Suddaby ; Nov. 2, 1926. Miss C. E. Holden ; Dec. 4, 1926. Miss U. F. C. Henson ; Dec. 27, 1926.

London Gazette, January 7

General Duties Branch

The following Flight-Cadets having successfully passed through R.A.F. Cadet College, Cranwell, are granted permanent commns. as Pilot Officers, with effect from and with seniority of Dec. 11, 1926 :—J. Clarke, W. C Cooper, T. C. Dickens, J. C. A. Johnson, V. Q. Blackden, J. Norwood, C. W. Dicken, P. M. Watt, A. M. Watts-Read, P. C. I. Elderton, W. N. Blain, R. J. D. Brown, B. M. Cary, G. Francis, E. C. Lewis, V. B. J. Jackson, G. J. L. Saye, P. L. A. Berthon, H. B. Maugham, R. P. Teale, J. Marson, G. F. Lewis, P. L. P. Marett, A. R. Sarel, T. J. Arbuthnot, G. F. Whistondale.

The following are granted permanent commns. in ranks stated :—Flight-Lieut. J. W. F. Merer ; Nov. 1, 1926. Flying Officer A. R. Perry ; Sept. 18, 1926. The following Pilot Officers are promoted to rank of Flying Officer ; Nov. 14, 1926 :—F. B. Tomkins, W. R. J. Spittle, E. G. H. Russell-Stracey, S. C. Parker.

The following are transferred to Reserve, Class A :—*Flight-Lieut.* : R. S. Martin ; Jan. 3. *Flying Officers* : G. M. Trundle ; Jan. 3. F. J. Phillips ; Jan. 6.

Pilot Officer on probation G. Carleton resigns his short service commn. ; Dec. 25, 1926. The following relinquish their short service commns. on account of ill-health ; Jan. 5 :—Pilot Officer J. G. Chamberlain ; Pilot Officer on probation C. Pitt-Hardacre. The short service commn. of Pilot Officer on probation F. E. Liddell Reynolds is terminated on cessation of duty ; Jan. 5.

Accountant Branch

The following Pilot Officers on probation are confirmed in rank and promoted to rank of Flying Officer ; Dec. 27, 1926 :—D. C. Stone, C. L. Dook, A. E. Fairs, M.C., J. P. Cave, A. L. Derry, W. F. Quilliam, J. Lambie, H. Crowther.

Medical Branch

M. D. Rawkins, M.B., B.S., is granted a short service commn. as Flying Officer, for three years on active list, with effect from and with seniority of Dec. 20, 1926.

Chaplains Branch

The Rev. K. C. H. Warner, D.S.O., M.A., is granted a short service commn. as a chaplain, with the relative rank of Squadron-Leader ; Jan. 1.

Reserve of Air Force Officers

R. L. Green is granted a commn., in Class B, General Duties Branch, as a Flying Officer on probation ; Jan. 4. Pilot Officer F. J. Wright relinquishes his commn. on account of ill-health ; Jan. 5.

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the Royal Air Force are notified :—

General Duties Branch

Air Vice-Marshals : Sir J. F. A. Higgins, K.B.E., C.B., D.S.O., A.F.C., to R.A.F. Depot, Uxbridge, supernumerary on transfer to Home Estab., 24.11.26, to Air Ministry on appointment as Air Member for Supply and Research, 27.12.26. Sir W. G. H. Salmond, K.C.B., K.C.M.G., D.S.O., to H.Q., India, pending taking over command, 27.12.26.

Group Captains : C. S. Burnett, C.B., C.B.E., D.S.O., to Central Flying School, Wittering, to command, 24.1.27. W. R. Freeman, D.S.O., M.C., to Air Ministry, Directorate of Operations and Intelligence, on appointment as deputy Director, 24.1.27.

Flight Lieutenants : L. M. Elworthy, to No. 8 Sqdn., Iraq, instead of to No. 84 Sqdn., as previously notified, 7.12.26 ; C. R. Smythe, to No. 43 Sqdn., Tangmere, 24.12.26 ; M. L. Taylor, A.F.C., to No. 25 Sqdn., Hawkinge, 3.1.27.

Flying Officers : S. F. Colman, to No. 1 Sch. of Tech. Training (Apprentices), Halton, 10.1.27. A. W. Bates (Hon. Flt. Lt.), to R.A.F. Depot, Uxbridge, 10.1.27 ; A. P. K. Hattersley, to No. 24 Sqdn., Kenley, 10.1.27 ; F. W. Mundy to No. 1 Sch. of Tech. Training (Apprentices), Halton, 10.1.27 ; E. C. A. Wing, to No. 58 Sqdn., Worthy Down, 10.1.27.

Stores Branch

Flight Lieutenant L. A. Lavender to Air Ministry, Directorate of Equipment, 7.12.26.

Flying Officers .—L.V. Hirst, to No. 1 Sch. of Tech. Training (Apprentices) Halton, 29.12.26. J. R. R. Harvey, M.M., to R.A.F. M.T. Depot, Shrewsbury, 29.12.26. L. W. Park, to No. 23 Sqdn., Henlow, 29.12.26. C. S. Whellock, to No. 99 Sqdn., Bircham Newton, 29.12.26. J. W. Hustwaite, M.B.E., and M. F. Tomkins, to No. 1 Stores Depot, Kidbrooke, 29.12.26. J. W. Mitchell, to No. 100 Sqdn., Spittlegate, 29.12.26. B. H. Burt, to Supply Services, Base Supply Depot, Iraq, 10.12.26.

Medical Branch

Squadron Leaders : E. A. Lumley, M.C., M.B., to Sch. of Tech. Training (Men), Manston, 15.2.27 ; D. McLaren, M.B., to R.A.F. Depot, Uxbridge, on transfer to Home Establishment, 12.12.26.

Squadron Leader H. S. C. Starkey, O.B.E., M.D., M.A., to H.Q., Iraq, 13.12.26.

Chaplains' Branch

Revd. K. C. H. Warner, D.S.O., M.A., to Sch. of Tech. Training (Men), Manston, on appointment to a Short Service Commn. as Chaplain (C. of E.), 1.1.27.

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COMMERCIAL AIR TRANSPORT*

MUCH has been written on the subject of commercial air transport, but the bulk of the information hitherto presented has been either of a very general character—mainly dealing with the theory of the problem—or else of a specialised form, dealing with one particular aspect of the subject ; some facts or data relating to one individual problem or the other. In short, there has been little said on the subject which would serve as a "text book" for the student—or person directly interested in commercial air transport.

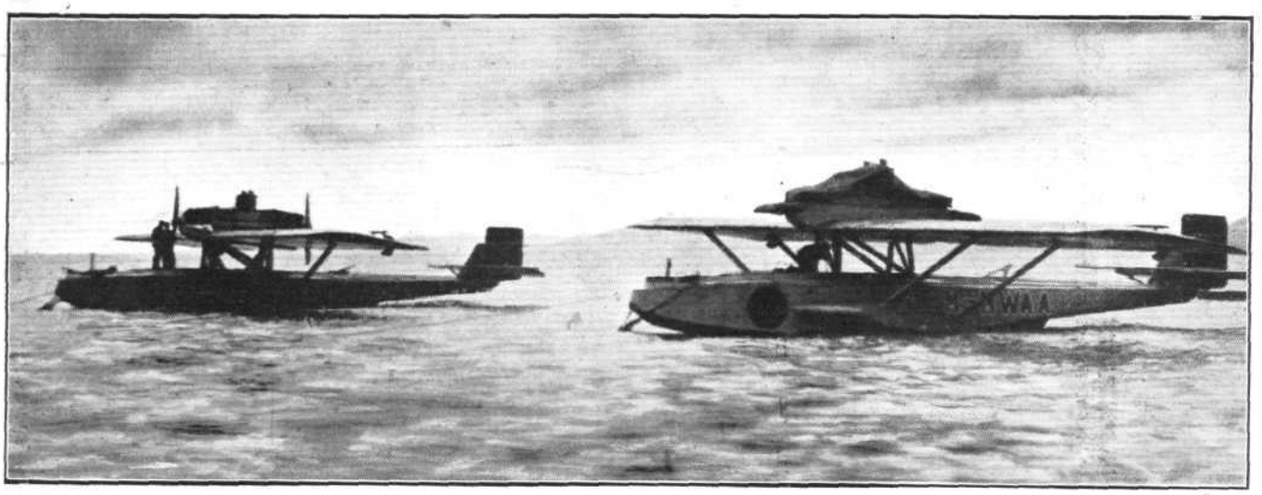
In "Commercial Air Transport," which has just been published, the authors—Lieut.-Col. Ivo Edwards and F. Tymms—have endeavoured to fill this want, and have, we think, achieved no small amount of success in their effort. Although the book can easily be put into one's pocket—provided one is not *too* fastidious—it contains in its 160-odd pages a remarkably comprehensive survey of the many problems concerned in this extremely important branch of aeronautics. All subjects of which first-hand experience has already been gained are dealt with from the operational, or practical, point of view—and it may be mentioned here that both authors are intimately associated with the practical side of air transport—but passing reference is also made to those problems which are as yet, more or less, undeveloped, such as airship operation, etc. As Sir Sefton Brancker writes in a foreword, the production of this book originated with the Council of the Institute of Transport, who have very wisely accepted knowledge and experience in air transport as a proper qualification for membership of the Institute.

Opening with a chapter on the early history of flying, the authors devote the first part of the book to the fundamental and theoretical side of commercial air transport, including chapters on Subsidy ; State *v.* Private Operation ; Legislation ; General principles ; Basic principles of, and the Economic factors in, the operation of services ; Ground organisation—the lay out of a terminal aerodrome, and meteorology and wireless service.

Having briefly, but very thoroughly, gone over the foundations necessary for building up a commercial air service, the authors (in Chapter X *et seq.*) proceed to deal with the more practical side, such as Traffic Control, Navigation—a special chapter being devoted to night flying—Licences—for personnel and aircraft ; the organisation for the handling of passengers, freight and mails ; air routes and time-tables.

Finally, the authors deal with aircraft and engines, technical development, and conclude with a chapter on the application of aviation to uses other than transport, which includes references to air photography and surveying ; and a short chapter on the future of commercial air transport. The book contains several illustrations of aircraft, engines and other items connected with commercial air services in addition to some very interesting and instructive tables. We conclude by concurring with the following sentence from Sir Sefton Brancker's foreword :—"I therefore look upon this book as a milestone in the general progress of commercial aviation in the British Empire."

* *Commercial Air Transport*, by Lieut.-Col. Ivo Edwards, C.M.G., and F. Tymms, M.C., A.F.R.Ae.S. Sir Isaac Pitman & Sons, Ltd., London. Price 7*s.* 6*d.* net.



THE SPANISH AFRICAN FLIGHT: Two of the Dornier Wal flying-boats, fitted with Rolls-Royce "Eagle IX" engines, of the Spanish Atlantic Squadron, which, under Major R. Llorente, flew from Melilla to Fernando Po (4,500 miles) in December last. It will be noted that the two "Eagles" in each machine—which are placed tandem fashion—are wearing their "tarpaulin jackets."

Royal Aeronautical Society Notices

Informal Discussions.—From time to time the Royal Aeronautical Society hold informal discussions on subjects of interest to aeronautical engineers. These discussions are open to all members of the Society and any of their friends who may wish to attend. No tickets of admission are required. So that speakers may say freely what they have in their minds, at the most only a précis of the proceedings is made. The opener and opposer of the discussion each speak for a quarter of an hour, and speakers afterwards are limited to five minutes each, though each speaker may take part in the discussion more than once. At these discussions many more practical points are brought out, by question and answer, than is possible in the more formal lectures given before the Society.

The first discussion for 1927 will be held on January 18 at 6 p.m., in the Library of the Society, at 7, Albemarle Street, W. 1. The discussion will be on "Oil Cooling," and will be opened by Mr. A. H. R. Fedden, of the Bristol Aeroplane Co. Mr. Fedden's reputation is high enough to ensure a masterly exposition of the present state of oil cooling, and a highly interesting discussion should follow.

On February 15 Mr. Dyson will open a discussion of "Materials with special reference to Corrosion."

In March, tentative arrangements have been made for a discussion on "Metal Airscrews," in which Mr. Lynam and Dr. H. C. Watts will take a large part.

It is hoped to arrange further discussions on other subjects in the near future. The committee arranging these discussions will be grateful for any suggestions made for future discussions, together with the names of their openers. J. LAURENCE PRITCHARD, *Secretary.*

Westland Aircraft Society. Yeovil Branch of the R.Ae.Soc.

WE are asked to draw attention to the following alterations in the syllabus of the Ground Engineers' Lectures which was published in our issue of January 6. Mr. Robson will give his lecture on "Compasses—Installation and Swinging" on February 13 instead of March 9. On February 23 Mr. S. G. Williams, A.M.I.M.E., Air Ministry, will lecture on "Metals and Their Heat Treatment," in place of Mr. Goswell's lecture on "Workshop Processes," which will be given on March 2. On March 9, Capt. L. Warner, A.M.I.A.E., Air Ministry, will lecture on "Power Plant Installation"; whilst, instead of Capt. Keep's lecture on "Equipment Installation" on March 23, Mr. R. C. Taylor will lecture on "Inspection and Checking of Components."

Institution of Aeronautical Engineers

ON Friday, January 28, the Institution is holding a house dinner at the Engineers' Club, Coventry Street, W.C. 1, at 7.30 p.m., which will be followed by a discussion on "Aeronautical Engineering." Tickets for members and guests can be obtained by application to the honorary secretary as soon as possible. The price is 5s. each.

Mr. W. Villa Gilbert has resigned the honorary secretaryship of the Institution, and Mr. Norman J. Hulbert has been appointed in his place.

A WELCOME sign of the times is the publication of Vol. I, No. 1, of the *Journal* of the Institution of Aeronautical Engineers. This journal will in future be published monthly, and will take the place of the "Minutes of Proceedings" and "Members' Circular" that have during the earlier days of the Institution been the only means of keeping members informed of the work and activities of the Institution. We wish the new journal every success. No. 1 contains a short biography and a portrait of the President of the Institution, Lieut.-Col. Moore-Brabazon; Notices to Members; a brief outline of the aims and objects of the Institution; the paper on "Metal-clad Rigid Airship Development" read by Mr. Upson, and the discussion following same; Mr. Wingfield's paper on "Some Reminiscences of Ten Years Ago," with discussion; and a first instalment of an article on "Civil Aviation," by N. J. Hulbert. The price of the journal is 2s., and we gather that it can be obtained, also by non-members, by application to the office of the Institution of Aeronautical Engineers, 34, Broadway, Westminster, London, S.W. 1.

Society of Model Aeronautical Engineers

AT the recent Schoolboys' Exhibition held at the Royal Horticultural Hall (January 1 to 7), the Society was able to put up an excellent show of model aeronautical work. Space does not permit a full description of the exhibits on the stand, but this will be given in due course in the S.M.A.E. journal. A flying display by members was also given on the opening day of the exhibition in Vincent Square.

The next meeting of the Society will take place at Headquarters on Friday, January 21, at 7.30 p.m. This will be the annual general meeting, and it is hoped that all members will make an effort to be present on this occasion.

Communications and inquiries should be addressed to 58, Norton Road, Wembley. B. K. JOHNSON, *Hon. Secretary.*

NEW COMPANIES REGISTERED

AIR TAXIS, LTD., Stag Lane Aerodrome, Edgware.—Capital £5,000, in £1 shares. Objects: to carry on business as letters out on hire of flying machines, to carry passengers and goods by air; to establish, maintain, and work lines of and manufacture and deal in aerial conveyances; to provide and maintain hangars, to act as aerial and general engineers, etc. Life directors: G. B. H. Mundy, Lieut. R.A. (T.); W. L. Hope (governing director). Solicitor, H. E. Crane, Northwood.

ISACCO HELICOGYRE, LTD.—Capital £3,000, in 1s. shares. Objects: to adopt an agreement with V. Isacco, to acquire, develop, and turn to account the invention, rights and property, etc., manufacturers of and dealers in aircraft, mechanical conveyances, etc. Permanent directors: V. Isacco (managing director), W. J. B. Odhams, E. Cohn, and A. Isacco. Solicitors: Bull and Bull, 3, Stone Buildings, Lincoln's Inn, W.C. 2.

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PUBLICATIONS RECEIVED

The "Gloster III" (Napier "Lion" Engine) Schneider Cup Race, 1925. Reproduction in Colour from a Painting by Geoffrey Watson. The Gloster Aircraft Co., Ltd., Cheltenham.

Fluglehre Dritte Auflage. By Dr. R. Von Mises. Julius Springer, Linkstrasse, 23–24, Berlin, W. 9. Price, Reichsmark 12·60.

Illustrated Calendar, 1927. Fokker: N. V. Nederlandsche Vliegtuigenfabriek, Amsterdam.

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AERONAUTICAL PATENT SPECIFICATIONS

(*Abbreviations:* Cyl. = cylinder; i.c. = internal combustion; m. = motor. The numbers in brackets are those under which the Specifications will be printed and abridged, etc.)

APPLIED FOR IN 1925

Published January 13, 1927

23,121. A. AND S. A. HARPER. Propellers. (262,860.)
29,931. VICKERS, LTD., and A. OGDEN. Aerial bombs, etc. (262,916.)

APPLIED FOR IN 1926

Published January 13, 1927

10,050. AIRCRAFT DEVELOPMENT CORPORATION and E. J. HILL. Riveting machines. (263,011.)
30,532. A. HALL-BROWN. Supercharging of internal-combustion engines. (263,075.)

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